



Edd Clark & Associates, Inc.

Environmental Consultants

December 28, 2005

Job No.: 0255,003.97

Ms. Shelly Ocana

Executor of the Estate of Herschel McGuire

% Ms. Maisie McCarty

Law Offices of Kelly Jackson Christianson & Smith

100 B Street, Suite 430

Santa Rosa, CA 95401

**Groundwater Monitoring Report - September 2005 Event
312 and 336 West College Avenue
Santa Rosa, California**

Dear Ms. Ocana:

Please accept this as Edd Clark & Associates, Inc.'s (EC&A's) report of the September 16, 2005 groundwater monitoring conducted at 312 and 336 West College Avenue (site) in Santa Rosa, California (Figure 1). Groundwater monitoring is being conducted at the site at the request of the North Coast Regional Water Quality Control Board (NCRWQCB) because of a release of fuel hydrocarbons (FHCs) to the subsurface from underground storage tanks (USTs) for gasoline formerly located at the site. Work performed for this event included measuring depth to water (DTW) in and collecting groundwater samples for chemical analysis from monitoring wells MW-4, MW-5 and MW-6 (Figure 2); calculating groundwater-flow direction and gradient; evaluating the results of the analyses and calculations; and preparing this report. A copy of this report will be sent to the NCRWQCB for their review.

There are three monitoring wells at the site: MW-4, MW-5 and MW-6. MW-1 was destroyed during a 1996 over-excavation, and MW-2 and MW-3 were destroyed on September 15, 2005 because they were screened in what appears to be a perched groundwater zone that produces very little water and is not representative of groundwater quality in the vicinity of the former USTs.

Groundwater-level Measurements

On September 16, 2005, EC&A personnel measured DTW in monitoring wells MW-4, MW-5 and MW-6. DTW below the top of well casing (TOC) in each well was measured to the nearest 0.01 foot (ft) with a water-level meter. The meter was cleaned and rinsed prior to taking measurements in each well. DTW was recorded after the well caps were removed and groundwater in the wells was allowed to equilibrate for a minimum of 15 minutes. DTW in MW-4, MW-5 and MW-6 was 9.59 ft, 8.12 ft and 9.24 ft, respectively, and the groundwater-flow direction and gradient were N22°W and 0.039 ft/ft, respectively (Figure 3 and Table 1).

Groundwater Field Logs containing DTW measurements are in Appendix A. DTW data will be electronically submitted to the State GeoTracker Internet Database.

Groundwater Sampling Procedures

On September 16, 2005, EC&A personnel collected groundwater samples from MW-4, MW-5 and MW-6. Prior to collecting samples, the wells were purged with a submersible pump and checked for the presence of free-floating product. Three well-casing volumes of groundwater were removed from each well. Free-floating product was not observed in any of the purged water; however, a mild odor of FHCs was detected while collecting samples from MW-4 and MW-5. Groundwater pH, temperature and electric conductivity were measured during purging at intervals of approximately one well-casing volume. Groundwater samples were collected after groundwater parameters stabilized and the water level returned to a minimum of 80% of the initially recorded water level. Purge volumes and groundwater-quality-parameter measurements are recorded on the Field Logs in Appendix A.

Groundwater samples were collected in new single-sample, disposable bailers fitted with disposable bottom-emptying devices to minimize water degassing. The samples were transferred from the bailers to properly labeled, laboratory-supplied sterile sample containers, placed on ice and transported under chain-of-custody control to McCampbell Analytical, Inc. (MAI) for the required analyses. MAI is a State-certified laboratory located in Pacheco, California.

Decontamination Procedures

Sampling equipment was cleaned onsite with a low-phosphorous soap and water solution and double rinsed with tap water. Decontamination water and monitoring well purge water were placed in properly labeled, DOT 17H 55-gallon drums for temporary, onsite storage.

Groundwater Sample Analysis and Analytical Results

All groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (g), benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tert-butyl ether (MTBE) by Analytical Methods SW8021B/8015Cm.

TPHg and BTEX were detected in the groundwater sample collected from MW-4 at concentrations of 660 micrograms per liter ($\mu\text{g/l}$), 54 $\mu\text{g/l}$, 5.5 $\mu\text{g/l}$, 4.2 $\mu\text{g/l}$ and 6.7 $\mu\text{g/l}$, respectively. In the groundwater sample collected from MW-5, TPHg, benzene, ethylbenzene and xylenes were detected at concentrations of 51 $\mu\text{g/l}$, 3.1 $\mu\text{g/l}$, 0.85 $\mu\text{g/l}$ and 2.2 $\mu\text{g/l}$, respectively. Toluene, ethylbenzene and xylenes were detected in the groundwater sample from MW-6 at 1.1 $\mu\text{g/l}$, 0.56 $\mu\text{g/l}$ and 2.4 $\mu\text{g/l}$, respectively.

The results of analyses of groundwater samples from the monitoring wells are presented in Table 2 and on Figure 3. A complete copy of the analytical laboratory report is in Appendix B. Groundwater sample analytical results will be electronically submitted to the State GeoTracker Internet Database.

Discussion

Groundwater-flow direction at the site continues to be to the northwest, ranging from N14°W to N36°W (Figure 3). DTW below TOC has ranged from 5.06 ft (MW-3, January 1995) to 9.93 ft (MW-4, August 2004). Historic DTW measurements are presented in Table 2.

Historically, the highest concentrations of FHCs have been detected in groundwater samples from MW-4, which is located down-gradient from the former UST locations. Between September of 1997 and September of 2005, TPHg and benzene concentrations in MW-4 have decreased from 9800 µg/l and 1700 µg/l, respectively, to 660 µg/l and 54 µg/l, respectively. Between February of 2001 and September of 2005, TPHg and benzene concentrations in MW-5 have decreased from 4000 µg/l and 210 µg/l, respectively, to 51 µg/l and 3.1 µg/l, respectively. In MW-6, concentrations of TPHg have been below detection limits since February of 2003; concentrations of benzene have been below detection limits since August of 2003. Since February 2003, trace concentrations of toluene, ethylbenzene and xylenes have been detected sporadically in MW-6. MW-6 is sampled semi-annually during seasonally high and low groundwater levels.

Since 2003, significant fluctuations in FHC concentrations in MW-4 and MW-5 have occurred in concert with fluctuations in DTW. FHC concentrations peak during the wet season and are at their minimum during the dry season. Between June and September of 2005, FHC concentrations in MW-4 and MW-5 decreased at the same time that the water level in the well declined. Presumably, these fluctuations reflect the depth to the bottom of the smear zone, which is at about 7- to 8-ft below ground surface (bgs) in MW-4 and 6- to 7-ft bgs in MW-5. Figure 4 is a time-series plot of TPHg and benzene concentrations and DTW in MW-4 and MW-5 that illustrates the relationship between DTW and FHC concentrations.

Recommendations

Until the bio-sparge system is installed and operational, quarterly groundwater monitoring of wells MW-4 and MW-5 should continue. MW-6 should be sampled semi-annually during seasonally high and low groundwater levels. DTW should be measured quarterly in MW-4, MW-5 and MW-6. Groundwater flow direction and gradient should be calculated using groundwater elevation data from monitoring wells MW-4, MW-5 and MW-6. Groundwater samples should continue to be analyzed for TPHg and BTEX by Analytical Methods SW8021B/8015Cm.

After the bio-sparge system is installed and operational, MW-4, MW-5 and MW-6 should be sampled quarterly for at least one year.

Schedule

A groundwater sampling event was conducted at the site on December 14, 2005. EC&A anticipates that a report of this sampling event will be completed by January 31, 2005.

On February 28, 2005, EC&A submitted a Remedial Action Plan (RAP) to the NCRWQCB for implementing bio-sparging at the site. The NCRWQCB approved the RAP, with conditions, in their April 18, 2005 letter. The bio-sparge wells were installed on September 12-14, 2005. EC&A

anticipates that the bio-sparge compressor and plumbing to the sparge wells will be installed by January 31, 2006, the system will be operational in February 2006, and a report of the system installation will be completed by March 31, 2006.

Limitations

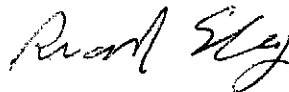
The conclusions presented in this report are professional opinions based on the information presented herein, which includes data generated by others. Whereas EC&A does not guarantee the accuracy of data supplied by third parties, we reserve the right to use this data in formulating our professional opinions. This report is intended only for the indicated purpose and project site. Conclusions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the site property can occur with time because of natural processes or the works of man on the site or adjacent properties. Changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

Thank you for allowing EC&A to provide environmental services for you. Please call John Calomiris, project manager, if you have any questions.

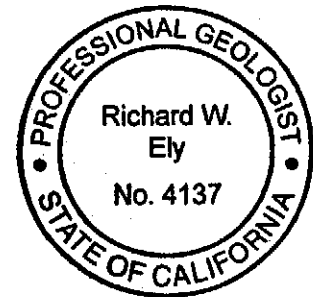
Very truly yours,



Etta Jon VandenBosch
Environmental Scientist



Richard Ely, PG #4137
Senior Geologist



Attachments: Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Groundwater Elevation Map with Sample Analyses, 16 September 2005
Figure 4 - Time-Series Graphs of TPHg and Benzene Concentrations in Monitoring Wells MW-4 and MW-5

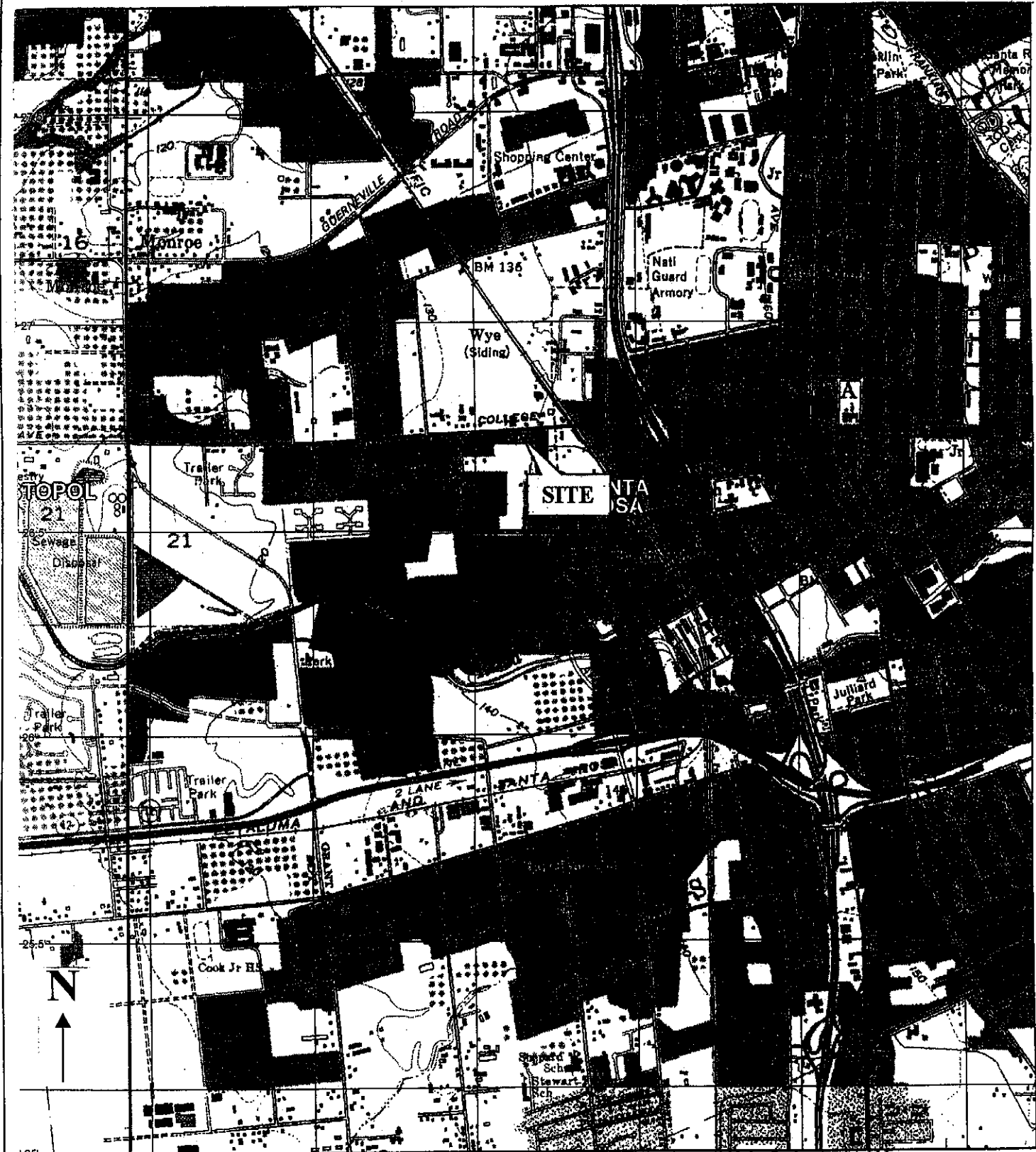
Table 1 - Groundwater Elevation Data

Table 2 - Analytical Results - Groundwater Samples from Monitoring Wells

Appendix A - Groundwater Field Logs

Appendix B - Analytical Laboratory Report

cc: Joan Fleck, North Coast Regional Water Quality Control Board



TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 990 ft Scale: 1 : 24,000

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Site Location Map
312 and 336 West College Ave.
Santa Rosa, California

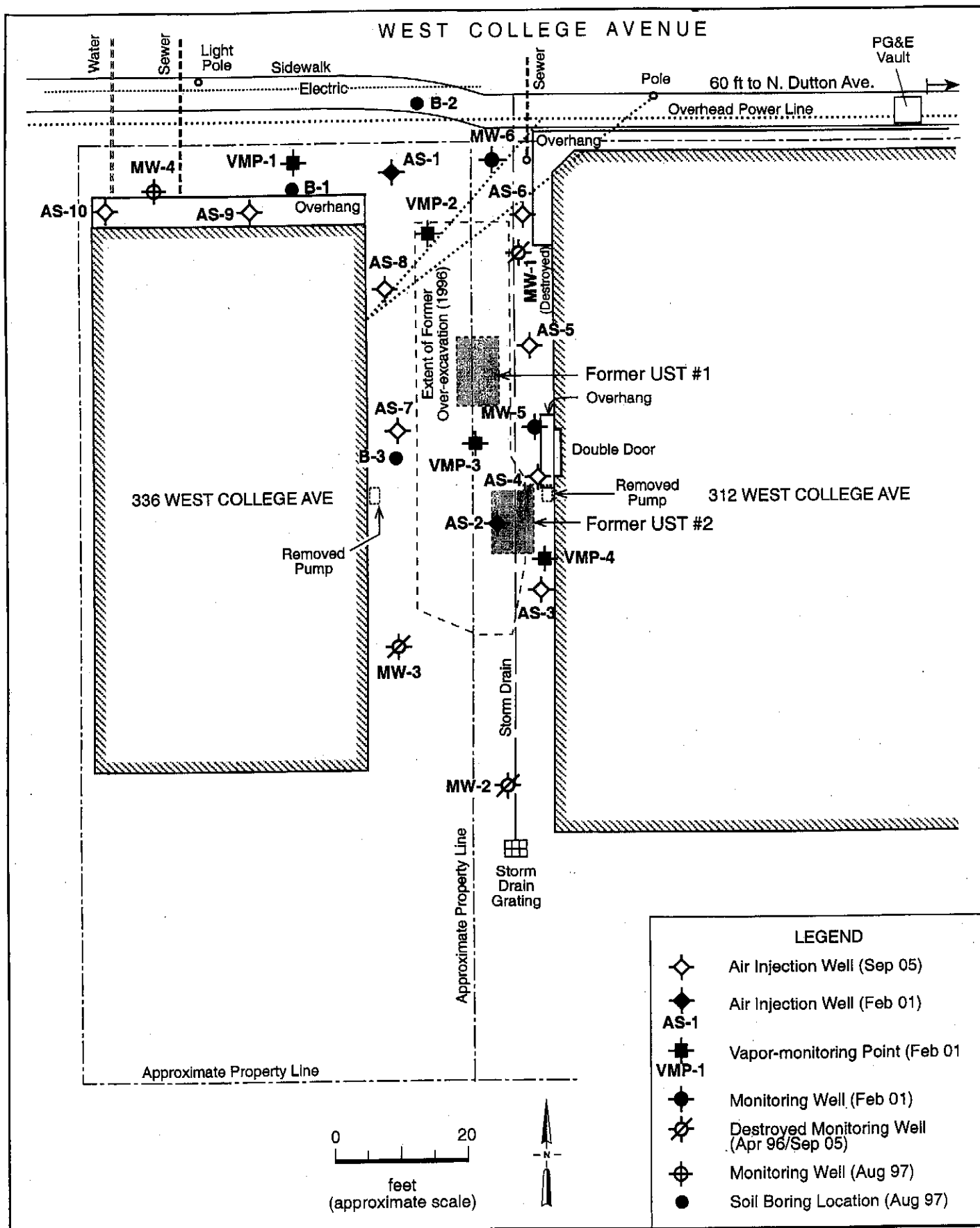
FIGURE
1

JOB NUMBER
0255,003.95

REVIEWED BY:
Lori Brown

DATE:
February 2003

REVISED DATE:



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SITE PLAN

312/336 West College Avenue
Santa Rosa, California

FIGURE

2

JOB NUMBER	0255,003.97	REVIEWED BY	EC&A, E.J. VandenBosch	DATE	April 2000	REVISED	December 2005	SHEET NO.	1 of 1
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(TRACE #397/R/G/06Dec05)

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TIME SERIES GRAPHS OF TPHg AND BENZENE CONCENTRATIONS
in Monitoring Wells MW-4 and MW-5
312/336 West College Avenue
Santa Rosa, California

FIGURE

4

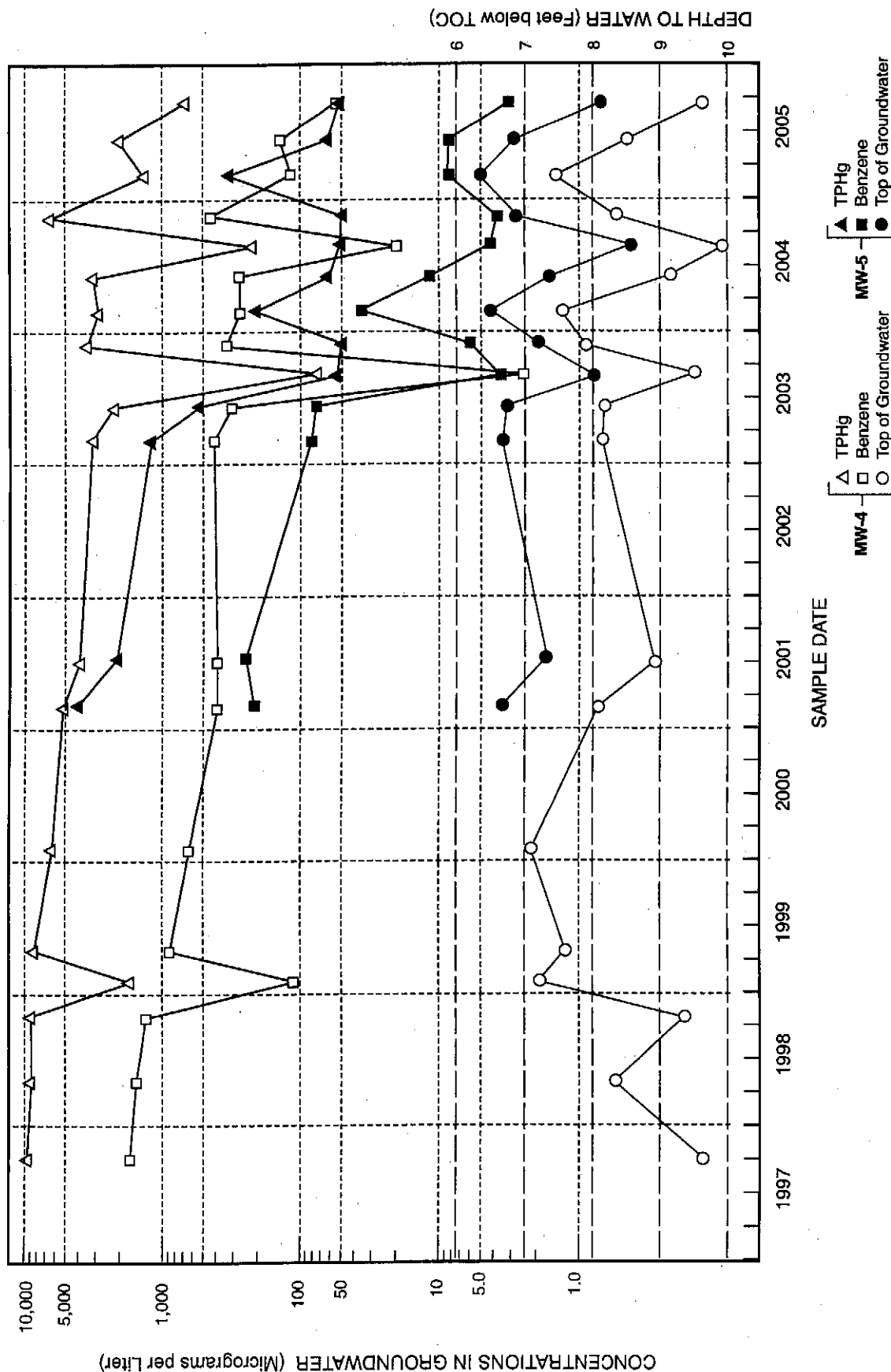


Table 1. Groundwater Elevation Data
312 & 336 West College Avenue, Santa Rosa, California

Well ID	Date	TOC Elevation (feet)	DTW (feet)	Groundwater Elevation (feet)
MW-2	02/05/01	137.48	5.56	131.92
MW-3		137.45	6.08	131.37
MW-4		137.43	8.08	129.35
MW-5		138.08	6.70	131.38
MW-6		137.66	7.61	130.05
Gradient = N 29°W, 0.035 ft/ft				
MW-2	06/12/01	137.48	6.21	131.27
MW-3		137.45	6.54	130.91
MW-4		137.43	8.93	128.50
MW-5		138.08	7.30	130.78
MW-6		137.66	8.41	129.25
AS-1		---	8.88	---
AS-2		---	7.18	---
Gradient = N 25°W, 0.040 ft/ft				
MW-2	02/04/03	137.48	5.43	132.05
MW-3		137.45	6.08	131.37
MW-4		137.43	8.15	129.28
MW-5		138.08	6.68	131.40
MW-6		137.66	7.88	129.78
Gradient = N 19°W, 0.042 ft/ft				
MW-2	05/12/03	137.48	5.47	132.01
MW-3		137.45	6.13	131.32
MW-4		137.43	8.21	129.22
MW-5		138.08	6.75	131.33
MW-6		137.66	7.94	129.72
Gradient = N 19°W, 0.040 ft/ft				

Table 1. Groundwater Elevation Data
312 & 336 West College Avenue, Santa Rosa, California

Well ID	Date	TOC Elevation (feet)	DTW (feet)	Groundwater Elevation (feet)
MW-2	08/22/03	137.48	6.24	131.24
MW-3		137.45	6.88	130.57
MW-4		137.43	9.50	127.93
MW-5		138.08	8.03	130.05
MW-6		137.66	9.35	128.31
Gradient = N 15°W, 0.043 ft/ft				
MW-2	11/10/03	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	7.90	129.53
MW-5		138.08	7.20	130.88
MW-6		137.66	7.90	129.76
Gradient = N14°W, 0.018 ft/ft*				
MW-2	02/06/04	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	7.58	129.85
MW-5		138.08	6.50	131.58
MW-6		137.66	7.34	130.32
Gradient = N14°W, 0.018 ft/ft				
MW-2	05/26/04	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	9.14	128.29
MW-5		138.08	7.36	130.72
MW-6		137.66	8.65	129.01
Gradient = N26°W, 0.03 ft/ft				

Table 1. Groundwater Elevation Data
312 & 336 West College Avenue, Santa Rosa, California

Well ID	Date	TOC Elevation (feet)	DTW (feet)	Groundwater Elevation (feet)
MW-2	08/17/04	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	9.93	127.50
MW-5		138.08	8.58	129.50
MW-6		137.66	9.74	127.92
Gradient = N18°W, 0.026 ft/ft				
MW-2	11/15/04	137.48	5.77	131.71
MW-3		137.45	6.31	131.14
MW-4		137.43	8.35	129.08
MW-5		138.08	6.90	131.18
MW-6		137.66	7.88	129.78
Gradient = N24°W, 0.037 ft/ft				
MW-4	03/03/05	137.43	7.46	129.97
MW-5		138.08	6.36	131.72
MW-6		137.66	6.95	130.71
Gradient = N36°W, 0.028 ft/ft				
MW-4	06/02/05	137.43	8.51	128.92
MW-5		138.08	6.84	131.24
MW-6		137.66	7.90	129.76
Gradient =N30°W, 0.04 ft/ft				
MW-4	09/16/05	137.43	9.59	127.84
MW-5		138.08	8.12	129.96
MW-6		137.66	9.24	128.42
Gradient = N22°W, 0.039 ft/ft				

Notes

The top of well casings for MW-5 and MW-6 were surveyed on March 13, 2001, by David L. Contreras, a State-licensed surveyor, to mean sea level and horizontal distance using the benchmark used previously for MW-4. Prior to 2005, water levels from MW-2 and MW-3 were not used to calculate groundwater flow direction and gradient because these wells were installed to a shallower depth than the other wells and are screened within what appears to be a perched water-producing zone that produces very little water. MW-1 was destroyed during 1996 over-excavation. MW-2 and MW-3 were abandoned on September 15, 2005.

TOC: Top of casing elevation relative to mean sea level

DTW: Depth to water from ground surface

NM: Not measured

*: An error in the map scale shown on previous Site Plans/Groundwater Elevation Maps was discovered in 2003. The accuracy of previously reported groundwater-flow directions is not affected; however, scale is relevant to gradient calculations. Gradients calculated prior to November 2003 are too high because the scale was too small (1" = 30' instead of 1" = 20'). The new base map has been enlarged to 1" = 20'.

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells
312 & 336 West College Avenue, Santa Rosa, California**

Sample ID	Date	DTW ft bgs	TPHg µg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l
MW-1 ⁽¹⁾	01/18/95 ^v	6.43	6500	NA	6.7	1.3	0.5	100
	01/23/96	6.60	ND<50	NA	1.6	ND<0.5	ND<0.5	ND<0.5
MW-2 ⁽²⁾	01/18/95 ^v	5.52	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/23/96	5.69	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-3 ⁽²⁾	01/18/95 ^v	5.06	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/23/96	5.16	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-4	09/02/97	9.63	9800 ^a	ND<210	1700	90	250	240
	04/23/98	8.34	9000 ^a	ND<5**	1500	69	290	100
	10/14/98	9.36	9000 ^a	ND<5**	1300	100	420	250
	01/20/99	7.22	1700 ^a	ND<40*	110	7.2	92	39
	04/13/99	7.58	8700	ND<570*	880	43	250	150
	01/18/00	7.06	6100 ^a	150*	620	94	90	190
	02/05/01 ⁽³⁾	8.08	5100 ^a	ND<20*	390	46	82	81
	06/12/01	8.93	3900 ^a	ND<30*	390	28	63	46
	02/04/03	8.15	3100 ^a	ND<0.5 [†]	400	30	77	60
	05/12/03	8.21	2200 ^a	NA	300	18	46	25
	08/22/03	9.5	75 ^a	NA	2.5	1.4	ND<0.5	ND<0.5
	11/10/03	7.90	3600 ^a	ND<84*	340	23	59	47
	02/06/04	7.58	2900 ^a	NA	270	13	53	29
	05/26/04	9.14	3200 ^a	NA	270	27	54	29
	08/17/04	9.93	210 ^a	NA	20	0.99	1.6	1.6
	11/15/04	8.35	6500 ^a	NA	430	24	43	45
	03/03/05	7.46	1400 ^a	NA	120	6.5	21	12
	06/02/05	8.51	2000 ^a	NA	140	13	21	14
	09/16/05	9.59	660 ^a	ND<5.0	54	5.5	4.2	6.7
MW-5	02/05/01 ⁽³⁾	6.70	4000 ^a	ND<20*	210	56	220	590
	06/12/01	7.30	2100 ^a	ND<5*	250	9.2	170	50
	02/04/03	6.68	1200 ^a	ND<0.5 [†]	80	9.7	88	110

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells
312 & 336 West College Avenue, Santa Rosa, California**

Sample ID	Date	DTW ft bgs	TPHg µg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l
MW-5 continued	05/12/03	6.75	530 ^a	NA	76	3.1	28	33
	08/22/03	8.03	54 ^a	NA	3.6	ND<0.5	0.59	1.3
	11/10/03	7.20	ND<50	ND<5.0*	6.0	0.51	1.9	1.6
	02/06/04	6.50	210 ^a	NA	36	1.4	23	5.0
	05/26/04	7.36	62 ^a	NA	12	ND<0.5	0.90	0.69
	08/17/04	8.58	ND<50	NA	4.2	ND<0.5	0.90	1.7
	11/15/04	6.90	ND<50	NA	3.9	ND<0.5	0.89	0.72
	03/03/05	6.36	310 ^a	NA	8.2	0.57	12	10
	06/02/05	6.84	61 ^a	NA	8.2	0.78	1.7	1.9
	09/16/05	8.12	51 ^a	ND<5.0	3.1	ND<0.5	0.85	2.2
MW-6 ⁽⁴⁾	02/05/01 ⁽³⁾	7.61	680 ^a	ND<5*	7.2	2.2	32	19
	06/12/01	8.41	340 ^a	ND<5*	3.5	2.7	12	2.5
	02/04/03	7.88	ND<50	ND<0.5 [†]	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/12/03	7.94	ND<50	NA	0.72	ND<0.5	ND<0.5	0.53
	08/22/03	9.35	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	0.58
	11/10/03	7.90	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/06/04	7.34	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/26/04	8.65	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	08/17/04	9.74	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	03/03/05	6.95	ND<50	NA	ND<0.5	ND<0.5	0.56	ND<0.5
	09/16/05	9.24	ND<50	ND<5.0	ND<0.5	1.1	0.56	2.4

Notes

DTW: Depth to water in feet below ground surface (ft bgs)
 TPHg: Total petroleum hydrocarbons as gasoline
 MTBE: Methyl tert-butyl ether
 µg/l: Micrograms per liter
 ND: Not detected above the reporting limit[†]
 NM: Not measured
 NA: Not analyzed
 NS: Not sampled
 V: Samples collected by VHC
 a: Unmodified or weakly modified gasoline is significant

Notes, continued

- *: Sample analyzed for MTBE by EPA Method 8020. Positive result on 1/18/00 probably is due to interference by high concentrations of TPHg
- **:
- †: MTBE and other gasoline oxygenates analyzed by Analytical Method SW8260B; none were detected
- †: MTBE and other gasoline oxygenates and the lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) analyzed by Analytical Method SW8260B; none were detected
- (1): MW-1 was destroyed during 1996 over-excavation
- (2): Monitoring of MW-2 and MW-3 was discontinued because they are screened in a perched aquifer; the wells were abandoned on September 15, 2005.
- (3): Samples were also analyzed for dissolved ferrous iron; all results were ND
- (4): MW-6 is sampled semi-annually during seasonally high and low groundwater levels.

Appendix A

Groundwater Field Logs

DAILY FIELD RECORD

Page 1 of _____

Project and Task Number: 0255	Date: 9/12/05
Project Name: Shelly Ocean	Field Activity: G.W.M.
Location: 312 + 336 W. College Ave.	Weather: Overcast, Cool
Time of OVM Calibration:	

Name	Company	Time In	Time Out
R. Johnson			

DRUM ID	DESCRIPTION OF SAMPLES AND QUANTITIES	LOCATION
13	Soil	Behind main
4	H ₂ O	building

TIME	DESCRIPTION OF ACTIVITIES	TIME
	WL - 4, 5, 6 - Samples order 5, 4	
12:10	Arrive on site open wells, allow for equilibration	
12:15	Set up decan	1st Rnd Pre DTU
12:45	Pre DTU	MW-4 - 9.59
1:12	Calculations for purge vol.	MW-5 - 8.12
1:26	Begin purging wells in order	MW-6 - 9.25
1:50	Allow for recharge	2nd Rnd - MW-4 - 9.59
2:25	Begin sampling wells in order	MW-5 - 8.12
2:45	Close & lock wells	MW-6 - 9.24
	Back to office	Post DTU
		MW-4 - 10.00
		MW-5 - 11.00
		MW-6 - 11.00

FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0255					Field point name: MW- 4				
Global ID: T0607700321					Well depth from TOC: 20'				
Project location: 312-336 W. College Ave					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 9/12/05					Product level from TOC: ND				
Time: 12:10					Water level from TOC: 9.59				
Recorded by: R. Johnson					Screened interval: 5-20				
Purge time (duration):					Well elevation (TOC): 137.66				
WEATHER									
Wind: 0-5 mph					Precip. in last 5 days: N				
VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft		19.41		<input type="checkbox"/> 6" well = 1.47 gal/ft		Gallons in 1 well volume: 3.3			
<input type="checkbox"/> 4" well = 0.66 gal/ft				<input type="checkbox"/> " well = gal/ft		Total gallons removed: 9.9		Well volumes removed: 3	
CALIBRATION									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
FIELD MEASUREMENTS									
Time	pH	EC (x1000)	Temp °F	Case Volumes/ Gallons	Appearance				
1:46	7.61	770.7	68.2	1 / 3.3	Low turb				
1:48	7.68	781.6	67.7	2 / 6.6	No seen				
1:50	7.84	773.5	66.6	3 / 9.9	Weak "Hc" odor				
				1					
Notes:									
Water level after purging below TOC:					80% of original water level below TOC:				
Water level before sampling below TOC:									
Appearance of sample:					Time: 2:45				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES-4		Type: Submersible	GPM: 0-2			
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input type="checkbox"/> 7 oxygenates	<input type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other:									
LABORATORY: <input type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0255		Field point name: MW-5		
Global ID: T060700371		Well depth from TOC: 20'		
Project location: 312-336 W. College Ave		Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:		
Date: 9/12/05		Product level from TOC:		
Time: 12:10		Water level from TOC: 8.12		
Recorded by: R. Johnson		Screened interval: 5-20		
Purge time (duration):		Well elevation (TOC): 138.08		

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: N
---------------	---------------------------

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 11.88	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume: 2
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: 6 Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC μ S (x1000)	Temp °F	Case Volumes/ Gallons	Appearance
1:36	7.71	703.8	71.8	1 / 2	low turb
1:38	7.67	722.5	71.5	2 / 4	N - clear
1:40	7.80	732.2	69.4	3 / 6	Weak "HC" odor
				1	

Notes:

Water level after purging below TOC:	80% of original water level below TOC: Y
Water level before sampling below TOC: 11.00	
Appearance of sample:	Time: 2:25

<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES42	Type: Submersible	GPM: 2
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input type="checkbox"/> 7 oxygenates
EPA Method:					
Other:					
LABORATORY: <input type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:					

FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER		<input type="checkbox"/> SURFACE WATER		<input type="checkbox"/> DOMESTIC WATER		<input type="checkbox"/> IRRIGATION WATER		<input type="checkbox"/> WELL DEVELOPMENT	
Project No: 0255					Field point name: MW-6				
Global ID: T2607700321					Well depth from TOC: 20				
Project location: 312-336 W. College Ave					Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:				
Date: 9/12/05					Product level from TOC:				
Time: 12:10					Water level from TOC: 9.24				
Recorded by: R. Johnson					Screened interval: 5-20				
Purge time (duration):					Well elevation (TOC): 137.43				
WEATHER									
Wind: 0-5 mph					Precip. in last 5 days: N				
VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING									
<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 10.76			<input type="checkbox"/> 6" well = 1.47 gal/ft			Gallons in 1 well volume: 1.9			
<input type="checkbox"/> 4" well = 0.66 gal/ft			<input type="checkbox"/> " well = gal/ft			Total gallons removed: 5.7		Well volumes removed: 3	
CALIBRATION									
Parameter	Time	Calibration	Before Sampling	Time	After Sampling				
EC:									
FIELD MEASUREMENTS									
Time	pH	EC (x1000)	Temp °F	Case Volumes/ Gallons	Appearance				
1:26	7.61	704.1	71.1	1 / 1.9	Low turb				
1:28	7.68	723.4	71.4	2 / 3.8	No Xleam				
1:30	7.70	733.8	69.8	3 / 5.7	No odor				
				1					
Notes:									
Water level after purging below TOC:					80% of original water level below TOC: 4				
Water level before sampling below TOC: 11.00									
Appearance of sample:					Time: 2:25				
<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES42		Type: Submersible	GPM: 2			
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse						
Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input type="checkbox"/> 7 oxygenates	<input type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates	
EPA Method:									
Other:									
LABORATORY: <input type="checkbox"/> McCampbell Analytical <input type="checkbox"/> Other:									

Appendix B

Laboratory Analytical Report

OCT 02 2005



McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Edd Clark & Associates, Inc. 320 Professional Center Ste. 215 Rohnert Park, CA 94928	Client Project ID: #0255; 312 & 336 W. College Ave, Santa Rosa CA	Date Sampled: 09/16/05
		Date Received: 09/19/05
	Client Contact: Ronen Johnson	Date Reported: 09/26/05
	Client P.O.:	Date Completed: 09/26/05

WorkOrder: 0509403

September 26, 2005

Dear Ronen:

Enclosed are:

- 1). the results of 3 analyzed samples from your #0255; 312 & 336 W. College Ave, Santa Rosa CA project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

Edd Clark & Associates, Inc.

320 Professional Center Ste. 215

Rohnert Park, CA 94928

Client Project ID: #0255; 312 & 336 W.
College Ave, Santa Rosa CA

Client Contact: Ronen Johnson

Client P.O.:

Date Sampled: 09/16/05

Date Received: 09/19/05

Date Extracted: 09/22/05-09/24/05

Date Analyzed: 09/22/05-09/24/05

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0509403

[illegible]

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in ug/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant (aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.



McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0509403

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 18084			Spiked Sample ID: 0509411-006A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) [£]	ND	60	91.2	89.3	2.04	106	104	2.29	70 - 130	70 - 130
MTBE	ND	10	96.9	99.7	2.83	96.3	95.2	1.15	70 - 130	70 - 130
Benzene	ND	10	112	111	1.32	91.3	88.7	2.88	70 - 130	70 - 130
Toluene	ND	10	106	106	0	91.4	88.7	2.90	70 - 130	70 - 130
Ethylbenzene	ND	10	104	105	1.15	94.6	91.6	3.17	70 - 130	70 - 130
Xylenes	ND	30	86	86.3	0.387	95	94.3	0.704	70 - 130	70 - 130
%SS:	112	10	113	111	1.95	96	95	0.957	70 - 130	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

BATCH 18084 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0509403-001A	9/16/05 2:45 PM	9/24/05	9/24/05 2:29 AM	0509403-002A	9/16/05 2:35 PM	9/22/05	9/22/05 4:24 PM
0509403-003A	9/16/05 2:25 PM	9/24/05	9/24/05 3:02 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; $RPD = 100 * (MS - MSD) / ((MS + MSD) / 2)$.

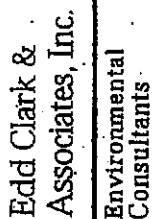
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



Chain of Custody Report

P.O. Box 3039, Rohnert Park, CA 94927
Tel: (707) 792-9500 (800) 474-1448 Fax: (707) 792-9504

E-mail in EDF for Upload to Geotracker:
Yes ☒ No ☐ Initials *RL*

Yes	No	Initials
<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Samplers Signature: E. Johnson

Analysis										Remarks
Facility Name & Location: 312 + 336 W. College Ave Santa Rosa, CA										
Global I.D. #	EC&A job #	Time	Date	Field Point Name	Sample ID (depth)	Sample Type	Media	# of Items		
70602700371	0255		9/14/05	MW-4				3	X	
		2:45						3	X	
		2:55						3	X	
		2:25								
ICR: <input checked="" type="checkbox"/> APPROPRIATE <input checked="" type="checkbox"/> GOOD CONDITION <input checked="" type="checkbox"/> HEAD SPACE ABSENT <input checked="" type="checkbox"/> DECHLORINATED IN LAB <input checked="" type="checkbox"/> PRESERVED IN LAB <input checked="" type="checkbox"/> TOAS <input checked="" type="checkbox"/> OSG <input checked="" type="checkbox"/> METALS <input checked="" type="checkbox"/> OTHER										
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	
	9/14			9/19	12:10					
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Relinquished by:	Date:	Time:	Received by:	

McC Campbell Analytical, Inc.

110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620



CHAIN-OF-CUSTODY RECORD

WorkOrder: 0509403 ClientID: ECAR EDF: NO

Requested TAT: 5 days

Report to:

Ronen Johnson
Edd Clark & Associates, Inc.
320 Professional Center Ste. 215
Rohnert Park, CA 94928

TEL: (707) 792-9500
FAX: (707) 792-9504
ProjectNo: #0255; 312 & 336 W. College Ave, Sant
PO:

Bill to:

Accounts Payable
Edd Clark & Associates, Inc.
320 Professional Center Ste. 215
Rohnert Park, CA 94928

Date Received: 09/19/2005
Date Printed: 09/19/2005

Sample ID	ClientSampleID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

0509403-001	MW-4	Water	9/16/05 2:45:00 PM	<input type="checkbox"/>	A														
0509403-002	MW-5	Water	9/16/05 2:35:00 PM	<input type="checkbox"/>	A														
0509403-003	MW-6	Water	9/16/05 2:25:00 PM	<input type="checkbox"/>	A														

Test Legend:

1	G-MBTX_W	2	3	4	5
6		7	8	9	10
11		12	13	14	15

Prepared by: Maria Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.